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PATENT TRADEMARK OFFICE

Docket No: 2309/01213

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#10  
Kee  
3-13-03

In re Application of: Satoshi MIZUTANI et al. Confirmation No.: 6716

Serial No.: 09/771,131

Art Unit: 1772

Filed: January 26, 2001

Examiner: CHEVALIER, Alicia Ann

For: TOP SHEET FOR ABSORBENT ARTICLES, AND METHOD FOR PRODUCING IT

RESPONSE TO OFFICE ACTION UNDER 37 C.F.R. §1.116

Box AF

Assistant Commissioner for Patent  
Washington, DC 20231

Sir:

Responsive to the Office Action dated January 2, 2003, reconsideration is respectfully requested.

Claims 1, 2, 4, 5, 7, 10, and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,327,730 to *Sorenson* in view of U.S. Patent No. 5,660,788 to *Gray et al.*, while claims 3, 6, and 12 stand rejected under 35 U.S.C. §103(a) as being

unpatentable over these two references, and in further view of U.S. Patent No. 5,955,187 to *McCormack*. These rejections are respectfully traversed.

Set forth on page 2 thru page 3 of the Office Action is the statement that:

“Sorenson discloses a topsheet of an absorbent article useful in such articles as diapers, bandages, catamenials, and the like (col. 1, lines 9-16). The top sheet comprises a thermoplastic film, which is perforated and has a plurality of nubbles protruding from the body side of the topsheet (col. 3, line 66 to col. 4, line 32 and figure 3). The nubbles have a cross-sectional diameter of from about 0.0127 to about 0.279 mm and a height that is at least 30% of the cross-sectional diameter (greater than between 0.00381-0.0837 mm) (col. 4, lines 33-50).

The topsheet contacts the wearer's skin and is therefore preferably compliant, soft feeling, fluid permeable, and non-irritating to the wear's skin (col. 3, lines 66-68).

Sorenson discloses all the limitations of the instant claimed invention except for the topsheet further containing particulate material.

Gray discloses a topsheet for an absorbent article such as diapers, incontinent articles, sanitary napkins, and the like (col. 2, lines 15-16). The top sheet comprises a thermoplastic material which includes a particulate material embedded (convex portions) on the wearer-contacting surface of the web. The particulate material may be talc or clay. See column 5, lines 20-27 and lines 63-67. The addition of the particulate material to the wearer-contacting surface of the plastic topsheet reduces the plastic like feel associated with such films (col. 6, lines 7-16).

The topsheet is compliant, soft feeling and non-irritating to the wearer's skin (col. 4, lines 47-48)...

It would have been obvious to one of ordinary skill in the art to add the particulate material of Gray to the wearer-contacting surface of Sorenson's topsheet because the addition of the particulate material would reduce the plastic like feel associated with such films... .”

With respect to the foregoing, Applicants respectfully assert that *Sorenson* discloses a disposable diaper having a textured topsheet of thermoplastic material. The topsheet is manufactured from a thermoplastic sheet surface that is imparted with a multiplicity of nubbles. In this regard, the nubbles do not substantially alter the macroscopic profile of the film,

but they do impart a more clothlike tactile feel, as well as a reduced gloss level to the film. As for the topsheet, in col. 3, lines 66 to 68 of *Sorenson* discloses that “porous topsheet 16 contacts the diaper wearer’s skin and is therefore preferably compliant, soft feeling, fluid permeable, and non-irritating to the wearer’s skin.”

While the intent of *Sorenson* is to provide a clothlike feeling, the main intent of this patent is not to avoid the plasticky, sticky feelings associated with wearing an absorbent article when it is wet, as is the case with the present claimed invention.

In order to avoid such plasticky, sticky feelings, the present invention requires the claimed protrusions to project beyond the top of the convex portion without causing any buckling. This reduces the contact area between the wearer’s skin and the top sheet. As a result, the plasticky, sticky feelings are reduced, and a sufficient level of air permeability is maintained across the space that is defined between the wearer’s skin and the top sheet.

Applicants further note that *Sorenson* has nubbles (14) formed over a tapered surface of the tapered capillary structure (38), which does corresponds to perforation 4 in the claimed invention. Nevertheless, the nubbles disclosed in *Sorenson* are far smaller than the tapered capillary structure, not only in size but also in height. Further, the size, height and pitch of the nubbles are determined so as to eliminate the plasticky appearance, but are not established with the intend of providing the physical effect of keeping the wearer’s skin away from the film surface. Applicants respectfully assert that while a conclusion has been reached that the nubbles in *Sorenson* correspond to the protrusions in the claimed invention such a conclusion is unjustified, since the claimed invention requires each protrusion to have a height that is greater than the convex portion of the particulate material, as set forth in independent claims 1, 11 and 12.

With respect to U.S. Patent No. 5,660,788 to *Gray et al.*, at col. 6, lines 1-6 the statement is made that:

“Preferably, the size of the particulate material 102 is such that light incident upon the visible surface of the web is substantially diffused into a multiplicity of directions by the particulate material into a multiplicity of directions rather than being specularly reflected, thereby providing a non-glossy visible surface.

Web 100 exhibits a soft, wearer-contacting surface which is not slick, sticky, or plastic-like when compared to prior art plastic films. The addition of the particulate material 102 to the first or wearer contacting surface of the apertured plastic film provides a textured surface which when utilized as a topsheet on an absorbent article is in contact with the wearer’s skin. The addition of the particulate material to the wearer contacting surface of the apertured plastic film reduces the plastic-like feel often associated with such films which some users resist placing in contact with their skin.

In a particularly preferred embodiment, the particulate material is present when initially contacted by the wearer’s skin in use. However, the particulate material is then “washed away” by the introduction of fluids (urine, menses, etc.). Therefore, the web 100 initially exhibits a soft, clothlike visual and tactile impression while presenting the after-use clean and dry benefits of prior art macroscopically expanded, three-dimensional, plastic webs. Depending on the desired results, the particulate material may be secured to the plastic web such that the particulate material is not “washed away” by the introduction of fluids.

As is clear from the foregoing disclosure, the *Gray et al.* patent takes an approach that is different from the approach taken in the present claimed invention. Hence, when the teachings of *Gray et al.* are combined with the teachings of *Sorenson*, the particulate material in *Gray et al.* may achieve an effect which is nothing more than the nubbles disclosed in the *Sorenson* patent. Therefore, even if *Sorenson* is modified in view of *Gray et al.* in the manner suggested in the Office Action, the resultant modified absorbent article achieves nothing beyond the teachings of *Sorenson* because this patent does not add anything to the teachings of *Sorenson*.

Regarding U.S. Patent No. 5,955,187 to *McCormack*, this patent relates to a breathable voided microporous film containing a particulate filler which swells inside the voids

when wet, thereby enhancing the barrier features. However, even if this reference is combined with the teaching of the *Sorenson* and *Gray et al.* patents, Applicants respectfully asserts that the combination of these patents would fail to arrive at the invention as set forth in independent claims 1, 11 and 12.

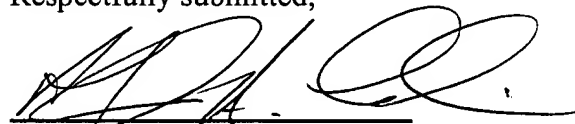
In sum, none of the cited references teach or suggest, either individually or in combination, the present claimed invention. That is, the "protrusions having a greater height than the convex portion," as positively recited in independent claims 1, 11, and 12. Accordingly, reconsideration of the rejections are respectfully requested.

In view of the patentability of independents claims 1, 11, and 12 for the reasons set forth above, dependent claims 2-7 and 10 are also patentable over the cited references.

In light of the foregoing remarks, this application should be in condition for allowance. Early passage of this case to issue is respectfully requested. However, if there are any questions regarding this Response, or the application in general, a telephone call to the undersigned would be appreciated since this would expedite the prosecution of the application for all concerned.

Date: March 10, 2003

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'A. Collins', written over a horizontal line.

Alphonso A. Collins  
Registration No. 43,559  
Attorney for Applicant(s)

DARBY & DARBY  
805 Third Avenue  
New York, New York 10022  
(212) 527-7700